was clamoring to get into farming and anyone could make money growing anything. Dealers got an 11.5 percent margin for new, 15.4 percent for used. In the most difficult times, new margins have run more than double the used level, but in 1987 and 1988, there was a movement toward balance.

"For years," said Walsh, "I've been telling clients that they have to cut out the self-deception they go through at trading time, only to have to write the value of the inventory down 18 months or so later. They'll respond, 'My salesmen aren't going to like it.' I tell them that they can't have a bunch of make-believe artists overvaluing like that."

Walsh added: "There are a lot of ways to move used equipment that are not well understood by many dealers. Sometimes when I was a dealer, we wouldn't buy a farmer's tractor on the deal. We'd tell him we'd put it on our lot at the price he set, take 15 percent of whatever it would bring, and we'd warrant it. We'd take this approach when we and the farmer couldn't agree on the machine's value."

How about a dealer offering to truck the farmer's used machine to auction for him and taking a small fee for the transport and related cost?

"That might be a good approach. The dealer doesn't have to tie up capital that way. But a lot of dealers will tell you, 'Oh, we couldn't do that!' There are also dealers who never think about turning used inventory into a rental fleet, but others have made this a good source of income."

Dealer views

Jack Churchwell of Bacon Equipment, Mer Rouge, La., agrees that it's hard for dealers to stay on top of the actual prices the market is setting on used equipment.

"A lot of dealers only look at that top figure, what they sell the new one for. Others only look at the value of the trade-in. The only figure that makes any difference is what's left over when you've sold them both. A lot of younger dealers want to make that deal, and they pay a little too much for the trade—then they start worrying.

"I depend on my contacts with older hands in the business. I like to call up a lot of veteran dealers I know, outside my trade territory, and get a line on values. We keep each other informed. It makes a difference."

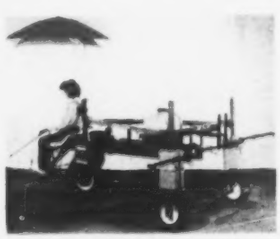
Dick Kunau, Kunau Implement, Preston, Iowa, has found that it's possible and desirable to sell combines in December, if they're clean and otherwise quality stuff.

"I sold a Case IH 1460 in December, a week after I'd taken it in on trade. It was still in the former owner's shed. This isn't so unusual anymore. Farmers like to shop this way. They have more time and there is more selection. They know what they want, and you can help them find just what they need.

"Typically, the in-season sale of a used combine is more likely to come when a farmer has a breakdown. The off-season sale, on the other hand, gives the farmer more selection and time to check the machine out to put any parts on he thinks are needed."

On that last sale—the combine still in the ex-owner's shed—Dick made a deal on parts. Anything needed for reconditioning would be sold to the buyer at a discount, and Kunau

ONE MAN
SELF-PROPELLED
WEEDER



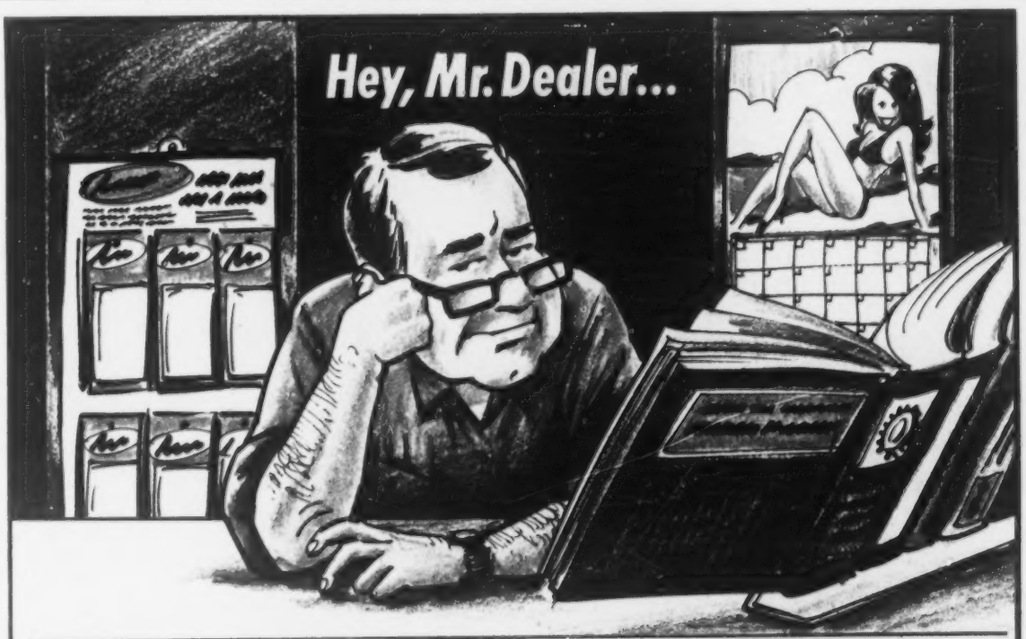
SUGGESTED RETAIL $1,149

The original
WEBER WEEDER

Proven performance with over 6,000 machines in the field. Priced so that you can afford 3-4 Weber Weeders for what one 3-seat machine costs–AND get 3 times the work done. Write for more details.

FICKLIN MACHINE CO., INC.
209 W. Grant
Onarga, Ill. 60955

Circle (28) on Reply Card



Here's 3 things to consider:

1. When you fix up trade-in equipment, why use new parts when less expensive used parts will do?

2. Give Parts Express an opportunity to bid on your competitive brand used tractors/combines (running or not).

3. If your customer should decide not to complete a repair job, suggest he sell us the pieces.

At Parts Express we make up the largest tractor and combine (and cotton picker) dismantlers in the nation, with millions of quality parts in inventory. And at a savings of 25% and more.* We offer expert service by trained, knowledgeable personnel. Turn-around on parts is fast too! Pick up your part at the counter of any one of our eleven locations. Or we'll ship it out within 24 hours or by rush express at your request.

PARTS EXPRESS

Boost your bottom line and save your customer downtime, money and hassles. Call Parts Express! *(Remember, we buy salvage tractor, combine and cotton pickers.)*

*Depending upon availability.

Audubon Tractor Parts
Audubon, IA 50025
1-800-831-5730

Bettis Tractor Parts
Crawfordsville, AR 72327
1-800-443-7365

Central Michigan Tractor Parts
St. Johns, MI 48879
1-800-248-9263

Evansville Tractor Parts
Evansville, WI 53536
1-800-525-7278

Iowa Falls Tractor Parts
Iowa Falls, IA 50126
1-800-232-3276

Leesburg Tractor Parts
Leesburg, IN 46538
1-800-426-6960

Mid-East Tractor Parts
Goldsboro, NC
1-800-322-1871

Mid-South Tractor Parts
Sikeston, MO 63801
1-800-325-7070

South Central Tractor Parts
Leland, MS 38756
1-800-247-1237

Watertown Tractor Parts
Watertown, SD 57201
1-800-843-4413

Worthington Tractor Parts
Worthington, MN 56187
1-800-533-5304

MasterCard VISA

Circle (29) on Reply Card

would send for the required parts as part of a stock order, helping to keep margins intact.

"It's easier to sustain margins on used combines than on used tractors," Kunau observed. "We've probably done more buying of used equipment for customers than we have acquired through trading in the past four or five years. We've found that when you go out looking for a quality tractor, the competition is quite fierce and margins tight."

Warren Deters, Deters Implement, Eitzen, Minn., has been increasing his efforts at acquiring and retailing used equipment.

"We buy a fair amount of used items we can resell," he said. "Prices have been creeping up, and we like it. This part of southeast Minnesota is like typical Wisconsin dairy country, and about anything between 50 and 100 horsepower that is clean is good. We're a Deutz-Allis dealership and we prefer working with Allis-Chalmers units. In any case, we only buy top-quality merchandise."

McWHIRTER: "We encourage dealers to come to auctions. It's a way of going to school."

ALLEN: "Whenever a dealer sets out to dictate how the market is going to be, get ready for a train wreck."

This dealership may take in a poor machine on trade and in some instances fix it up. "We have a varied clientele," noted Deters. "Some customers will want to buy such items. But we don't buy equipment just to keep the service department busy. They are usually busy on their own, and what used equipment reconditioning is needed will be fitted in with the rest of the work."

Bob Ellefson, Ellefson Implement, Mitchell, S.D., thinks there is still too much inventory at the dealer level, both new and used.

"Interest rates are high, and dealers need to cut both new and used inventory levels to reduce inventory expense, and it's hard when the interest rate on used is 14.5 percent. The implement business is very capital-intense, and the only way to change that is to lower inventory. We'd like some of that just-in-time that the manufacturers are so fond of, but we don't get it in parts or wholegoods."

Ellefson feels that there is too much difference between prevailing interest rates on new and on used equipment. "When you get done with the special deals on new equipment financing," he said, "it's about half of the interest rate on used. If you were to devise a system to attack and hurt the dealer, you couldn't find a better one. It's what's destroying the margins, and it will force some dealers out."

Leon Walterman, Walterman Implement, Dike, Iowa, is happy with the way used equipment sales are going for his dealership. But he thinks some dealers have been trading too high and are headed for trouble.

"It's been excellent, especially with MF 850 and 860 combines of good quality. But the run-of-the-mill stuff tends to lose its value quickly. The combine that's worth $25,000 today will soon be worth $15,000, but the $50,000 unit can hold its value."

Walterman spoke of the dealer's need to know the "right price" for a specific machine. It involves knowing its condition but also the dealer's own customer base and what it needs and wants now.

"Farmers are willing to spend $20,000 more for that excellent combine or tractor than the average stuff because they know its value will hold. Farmers who have survived the 1980s are so much more value-oriented than they used to be."

Walterman reflected: "Farmers don't buy equipment to fix it up much anymore. For a lot of them, maintenance means fix-it-when-it's-broken. The maintenance programs on so many farms are pathetic. They just want the machines to work, and that's it."

For 1990, he sees used equipment sales holding up, "providing none of the manufacturers starts discounting the new equipment." It's hard to get good used combines now, and supplies will be tight moving closer to season of use.

"Some dealers," remarked Walterman, "will find out in 1990 that they were trading too high in 1989. In this business, it can take a year to find out you're broke. Too many dealers don't make the effort to find out what the right price is."

Auction specialists

For this story, *I&T* talked with three used equipment auction companies who, between them, probably sell about 10,000 tractors a year just at their own operations. In addition, there are countless farm sales, dealer closeouts and other situations that make machinery available, as well as one-on-one retail sales daily. They see what happens to a lot of machinery when it faces the test of supply and demand.

One thing all three emphasized: If it isn't high quality, the seller will likely be disappointed with what he gets.

Larry Allen, Carson Machinery Auction, Carson, Iowa, put it this way: "The quality still sells. Anything less than that declines fast. I'm not just talking about the junk, either.

"On a one-to-10 scale, while the nines and 10s hold value and bring good prices, the *sevens* lose value pretty fast. So for 1990, you can expect a lot of demand and high dollar for the top units. Machinery below that will bring much less."

At Charlotte, N.C., Frankie Godley of Godley Auction Co. comments: "In recent months, demand for late model stuff is good, but not extraordinary. People want machines in good condition as well as current. As you get away from that, prices are pretty soft."

And Bob McWhirter, McWhirter Equipment, Baxter, Iowa, confirms: "There's good demand for late, clean equipment—which is scarce. The other stuff falls off pretty fast. You see a lot of tractors that farmers were farming with for three or four more years than they had intended. They have been patched and repatched. There is a lot of rough equipment like that around, and it doesn't bring much."

Indications are that a lot of farmers understand the used equipment market better than the general run of dealers."Farmers follow farm sale prices in their neighborhoods," said Godley, "and they're a lot more aware of what goes on at auctions, too."

Not many of them buy with the idea of reconditioning. "The technology involved in these tractors," said McWhirter, "is beyond most farmers. Since they can't do it themselves anymore, they have to have equipment that is ready to go."

Allen agreed. "Farmers don't want the expense of rebuilding a high-hour tractor. They know they can't make it with weak stuff. That's why they zero in on the quality equipment."

Dealers are pretty much in the middle when it comes to shifts in used equipment supply and demand. That's why they need to be sensitive to the changes that can take place in the market continuously, he noted.

"Whenever a dealer sets out to dictate how the market is going to

(See MARGINS, pg. 28)

EMI-CIMA
(From pg. 21)

because of the turn of events, "the only alternative is now to go about the process of inviting a broad group of construction equipment manufacturers to affiliate with EMI and go forth with a positive program for all the industries and member interests we seek to serve."

EMI also announced that Jeanine Conwell, formerly director of statistical programs for CIMA, had become EMI's director of statistics, and that Komatsu/Dresser will be reporting its data only in the new EMI construction equipment statistics program. □

PALMQUIST
(From pg. 14)

can set a dealership off from mass merchandisers and other marketers of similar product lines.

Larry Palmquist's experience to date shows that it's possible to do these things and still grow the business toward its ultimate potential. Whether or not Stanley Equipment makes it all the way to $7 million as an outdoor power dealership, Larry will have had a lot of enjoyment moving in that direction and making a profit along the way. □

OPE MARKET
(From pg. 15)

next year or so in the American marketplace, it will help put the priorities in the right order. Otherwise, be prepared (for manufacturers who will provide) inappropriate product literature, inappropriate packaging and products that may or may not withstand the rigors of the consumer-testing organizations. □

EUROPEAN
(From pg. 17)

Canada, where the Nuffield brand name is still used by Marshall.

Steyr builds 10,000 tractors per year, but already has close links with other European companies. Transmission components from the Steyr factory are sold to Deutz-Fahr in Germany and to Valmet in Finland, and Steyr and Valmet are also collaborating over an engine development program.

Valmet is involved in another deal announced at Smithfield, which puts Massey-Ferguson transmissions into Valmet tractors of 150 hp and above. Valmet already supplies 180-hp engines for the MF tractor plant in France. □

BRIEFLY....

The Forging Industry Assn. has awarded a $1,500 prize to Dan Deering, Deere Harvester Works, Moline, Ill., for his design of a series of hydraulic cylinder caps. A 65-percent cost reduction resulted primarily from less machining, drilling and other processing with the design, according to FIA.

MARGINS
(From pg. 24)

be, get ready for a train wreck," commented Allen. "Sometimes a dealer will point to a tractor he has and says, 'I need $30,000 for it,' but if I offer to give him another one just like it for $20,000, and he's not interested, that means he gave too much for what he has."

After two mid-December sales, Allen told *I&T* that demand was excellent. "I'd say the market is running equal to or stronger than a year ago. But I'm not sure that it has exceeded dealer expectations. I see a pipeline full of tractors, acquired by dealers at a relatively high dealer figure. I see quite a gap between what they're asking and what they're getting.

"The supply got laid in there pretty high. The question is, how much demand will be there to support it?"

Said McWhirter: "A lot of dealers don't check around with used equipment wholesalers to see what market values really are. If a dealer wants to make money with used equipment, he has to be out there hustling, keeping up with the changes in supply and demand.

"We encourage dealers to come to an auction. It's a way of going to school. He can find out what the real market is doing and he can also get acquainted with a lot of pros in the business.

"You know, most of the trading in this business is done on the basis of a man's word about the condition of a machine. Deals on used tractors are cut with the buyer not seeing the machine until it's in his hands. If somebody doesn't tell it straight, or doesn't make it right when he's given out the wrong information, the word gets around about him. I always say, if his word's no good, his business is no good." □

Gerry Hodges has joined Innovative Equipment, Inc., as general/marketing manager. He is developing a marketing system for the Windfoil Turfgrass Sprayers. □

Portrait
of the Great American Investor

Right now, Lisa Kramer is this dog's best friend. As a veterinarian, she spends her days looking after patients with names like Smokey and Snowball and Spot. But she remembers to look after herself, too. Lisa invests in U.S. Savings Bonds, and that makes her one of the Great American Investors.

More than 30 million people like Lisa invest in America while helping themselves. They buy U.S. Savings Bonds. Bonds pay competitive rates, like money market accounts, when held for five years or more. They're free from state and local income tax. And they're one of the safest investments around.

You can purchase Bonds for as little as $25. So no matter how much you're investing, buy U.S. Savings Bonds. The Great American Investment. Find out more, call 1-800-US-BONDS.

U.S. SAVINGS BONDS
THE GREAT AMERICAN INVESTMENT

Bonds held less than five years earn a lower rate.

A public service of this publication.

March 31, 1990
EIGHT DOLLARS

IMPLEMENT & TRACTOR

The Farm and Industrial Equipment Specifications Encyclopedia

RED BOOK
RED BOOK
RED BOOK
RED BOOK

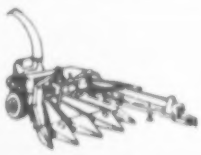
SRI
CONGRESS INFO SVC - STE B
4520 EAST WEST HWY
BETHESDA MD 20814
ITO02629 OTHAAA39039O
SOUND PRINTED MATTER

RED BOOK

Advertiser's Index....300

Agricultural Tractors and Power Units

Ten-Year Summary of Test Reports, 1980-1989....6
Agricultural Crawler Tractors....34
Agricultural Wheel Type Tractors:
Four-Wheel Drive....39
Two-Wheel Drive, With or Without Front Drive Option....46
Engines, Agricultural & Industrial, 45 CID and Larger....82



Forage Harvesting

Forage Harvesters, Cylinder and Flywheel Types....113
Forage Harvesters, Flail Cutter Type....115

Grain and Hay Harvesting

Combines, Pull Type....118
Combines, Self-Propelled....119
Hay Balers, Big Package....126
Hay Balers, Conventional Size Bale....129
Hay Mowers, Drum and Disc Types....131
Windrowers and Mower Conditioners, Pull Type....135
Windrowers and Mower Conditioners, Self-Propelled....138

Material Handling

Feeding:
Feed Grinder-Mixers....141
Hay Tub Grinders....142
Wagons, Feed Mixer....142
Forage, Grain and Hay Handling:
Crop Drying Equipment....145
Elevators, Auger Type....153
Elevators, Belt and Chain Types....161
Forage Blowers....165
Pneumatic Grain Conveyors....165
Wagons, Auger Unloading....169
Wagons, Forage and Cross Conveyor....172
Loaders:
Skid Steer, Self-Propelled....174
Tractor Front Mounted....179
Manure Spreaders....191

Mowing and Shredding

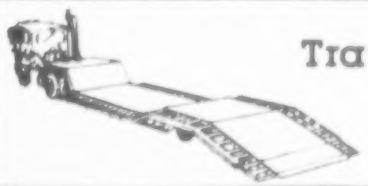
Flail Cutters....196
Roadside Mowers, Boom and Sidearm Mounted....202
Rotary Cutters....206

Planting, Fertilizer and Chemical Application

Drills/Seeders....219
Fertilizer and Chemical Applicators/ Broadcast Seeders....223
Liquid Herbicide Applicators....228
Planters....229
Sprayers, Air Mist....232
Sprayers, Hydraulic....237

Tillage

Cultivators, Field 250
Cultivators, Row Crop 256
Harrows, Disk 262
Power Harrows 269
Rotary Tillers 270



Transport

Gooseneck Trailers 275
Pull Trailers (4 Ton and Over) 278
Semi Trailers 279

Hydraulic Components

Control Valves 283
Couplings, Self-Sealing 286
Cylinders 290
Motors 294
Pumps 297

Abbreviations
DNA – Does not apply
NA – Not available
Std. – Standard
Opt. – Optional
Linear measurements may be to nearest ¼-inch.

For addresses of manufacturers whose products are listed in this edition, refer first to advertiser's index and obtain address from advertisement. For non-advertisers and companies that do not show an address on their advertisement, refer to company name and address listing in I&T PRODUCT FILE (Annual October 31 Issue).

IMPLEMENT & TRACTOR
Editorial, advertising and circulation correspondence should be addressed to: P.O. Box 1420, Clarksdale, Mississippi 38614
Telephone: 601 624 8503

EDITORIAL
Bill Fogarty, Editor
4210 Johnson Drive, Suite 100
Fairway, Kansas 66205
Telephone: 913 677 5728

Hembree Brandon, Editorial Director
Edward A. Phillips, Managing Editor
Scot McClure, Red Book Editor

CIRCULATION
Send change of address forms and circulation inquiries to:
Implement & Tractor
P.O. Box 1420
Clarksdale, Mississippi 38614

ADVERTISING
Darrah Parker, Production Manager
P.O. Box 1420
Clarksdale, Mississippi 38614
Telephone: 601 624 8503

Midwestern and Eastern Advertising Representative:
Thompson & Associates, Inc.
222 West Adams, Suite 1485
Chicago, Illinois 60606
Telephone: 312 726 1020

1900 Erie, Suite 203
North Kansas City, Missouri 64116
816 587 7484
Ray Stockwell

Haruki Hirayama
EMS, Inc.
Sagami Building 2 21
Shinjuku 4 chome, Shinjuku ku
Tokyo 160 Japan
Phone: (03) 350 5656
Cable: EMSINCPERIOO Tokyo
Telex: 2322520 EMSINC J

ADMINISTRATION
Tom L. Keith, President and Publisher

Subscription Information: Implement & Tractor is edited for persons in the farm and industrial equipment industry who function in the areas of retail sales and service, distribution, sales and service, marketing, engineering, financing, manufacturing and general management. Subscription prices: U.S. and Canada one year — $15, three years — $30. Single copies: $3.50, except Annual Statistical Number, $4; Product File issue, $6; Red Book issue, $8. Extra charge for service on back issues. Allow 6 8 weeks for change of address and new subscriptions.

Photocopy rights: Permission to photocopy for internal or personal use is granted by Farm Press Publications for libraries and others registered with the Copyright Clearance Center (CCC), provided the base fee of $2.00 per copy of article is paid directly to CCC, 21 Congress Street, Salem, Massachusetts 01970. Special requests should be addressed to Edward Phillips at the Clarksdale, Mississippi, address.

ISSN 0019 2953 $8.00 + 0.00

IMPLEMENT & TRACTOR (USPS 461 750, ISSN 0019 2953) is published monthly, except combined November December issue, and March and October, when two issues are published by Farm Press Publications, P.O. Box 1420, Clarksdale, Mississippi, and additional mailing offices. POSTMASTER: Send Form 3579 to P.O. Box 1420, Clarksdale, Mississippi 38614.

Copyright 1989. All rights reserved.

Farm Press Publications

Nebraska Test Procedures

General

Tractors are tested at the University of Nebraska according to the Agricultural Tractor Test Code approved by the American Society of Agricultural Engineers and the Society of Automotive Engineers or official Nebraska test procedure.

The manufacturer selects the tractor to be tested and certifies that it is a stock model. Each tractor is equipped with the common power consuming accessories such as power steering, power lift pump, generator, etc., if available. Power consuming accessories may be disconnected only when the means for disconnecting can be reached from the operating station. An official representative of the company is present during the test to see that the tractor gives its optimum performance. Additional weight may be added to the tractor as ballast if the manufacturer recommends use of such ballast. The static tire loads and the tire inflation pressures must conform to the specifications of Tire and Rim Association.

Preparation for Test

The engine crankcase is drained and refilled with new oil conforming to specifications in the operator's manual. The operator's manual is also used as the guide for selecting the proper fuel and for routine lubrication and maintenance operations.

The tractor is limbered up for a minimum of three hours on the drawbar. Preliminary adjustments of the tractor is permitted at this time. Any parts added or replaced during the limber-up run, or any subsequent runs, are mentioned in the individual test reports. The tractor is equipped with approximately the amount of added ballast that is to be used during the drawbar runs.

PTO Performance

Power take-off performance runs are made by connecting the power take-off to a dynamometer. During a preliminary power take-off the manufacturer's representative may make adjustment for the fuel, ignition or injection timing and governor control settings. The settings must be maintained for the remainder of the test. The manually operated governor control mechanism is set to provide the high-idle speed specified by the manufacturer. During the power take-off runs an ambient air temperature of approximately 75 degrees F. (24.0 degrees C) is maintained.

Maximum power is obtained at the rated engine speed specified by the manufacturer with the governor control set for maximum power. This same setting is used for all subsequent PTO runs. Time of the run is two hours. Whenever the power take-off speed during the maximum power run differs from the speeds set forth in the ASAE and SAE standards, an additional run is made at either 540 or 1000 rpm of the power take-off shaft. Time of this run is one hour.

Drawbar Performance

Maximum drawbar power is shown for the normal field speed selected by the manufacturer. All engine adjustments are the same as those used in the power take-off runs. If the manufacturer specifies a different rated engine speed for drawbar operations, then the position of the manually operated governor control is changed to provide the high-idle speed specified.

Maximum drawbar power is determined within the following limits: (1) slip of the drivers must not exceed 15 percent for pneumatic tires on the concrete test course or 7 percent for steel cleats on the well packed earthen course; (2) ground speeds must not exceed 10 miles per hour; (3) safe stability limits of the tractor must not be exceeded; (4) no other operating limit of the tractor must be exceeded. Drawbar load is applied until the manufacturer's rated engine speed is obtained with maximum governor control lever setting. Travel speed, drawbar pull and other data are recorded over two 500-foot straight level areas.

Fuel consumption is determined at the manufacturer's selected travel speed with the drawbar pull set: (1) to give rated engine rpm; (2) 75 percent of the pull at rated engine rpm; (3) 50 percent of the pull at rated engine rpm; and (4) maintaining the same load and travel speed as in (3) by shifting to a higher gear and reducing the engine rpm.

This summary shows the drawbar horsepower, corresponding travel speed and duel consumption at 100 percent, 75 percent, or 50 percent loads, and 50 percent of pull at reduced engine speed.

Also shown is the maximum drawbar horsepower produced for two 500-foot travel sections and corresponding travel speed, the maximum drawbar pull and the corresponding drive-wheel slippage.

In addition, the "lugging ability" obtained by increasing the load so that the full throttle engine speed drops to 80 percent of rated is given as a percent increase with respect to the pull at rated engine rpm.

The maximum drawbar horsepower and the corresponding speed and drawbar pull for other selected gears or travel speeds are shown in the individual test reports.

Sound Measurement

Sound is recorded during each of the Drawbar Performance runs as the tractor travels on a straight section of the test course. The dB(A) sound level is obtained with the microphone located near the right ear of the operator. Bystander sound readings are taken with the microphone placed 25 feet (7.5 meters) from the line of travel of the tractor.

An increase of 10 dB(A) will approximately double the loudness to the human ear.